



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/988,461	11/20/2001	Henry Cholod	VRO-005.01	8659

7590

02/02/2005

GARY LOSER
VARIAN SEMICONDUCTOR EQUIPMENT ASSOCIATES
35 DORY ROAD
GLOUCESTER, MA 01930

EXAMINER

RIVELL, JOHN A

ART UNIT	PAPER NUMBER
----------	--------------

3753

DATE MAILED: 02/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/988,461

Applicant(s)

CHOLOD, HENRY

Examiner

John Rivell

Art Unit	
-----------------	--

3753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12/30/04 (amendment).
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Applicant's arguments filed December 30, 2004 have been fully considered but they are not persuasive.

Claims 1-22 remain pending.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-8 and 10-21 are rejected under 35 U.S.C. §102 (b) as being anticipated by Holicer.

The patent to Holicer discloses in figure 5 and at column 6, lines 29-71 "a pressure relief valve comprising: a housing (shown generally at 1) having a passage (from conduit 16, through channel 53a, branch 53 to an outlet at 60) formed therein for connection (53a) with a fluid source (at 16) and a seal surface (seat 57) positioned about an opening (53a) in the passage, the housing including a discharge opening (60) for relieving pressurized fluid from the housing during operation of the relief valve; a valve member (54) positioned within the housing, the valve member being movable along an axis within the housing (at branch 53) to selectively engage the seal surface in a sealing relationship, the housing being sized and shaped to substantially restrict movement of the valve member (54) to a direction parallel to the axis by an arrangement of through holes (55) in the valve member (54) to restrict fluid flow when

the valve member (54) is in a closed position (as shown in fig. 5) during normal operating conditions with the seal surface being engaged in the sealing relationship and when the valve member is separated from the seal surface, the through-holes permit fluid to flow through the valve member; and a spring (58) coupled to the valve member and a portion of the housing, the spring (58) applying a predetermined spring force to the valve member (54) to bias the valve member (54) into contact with the seal surface (57) said predetermined spring force maintaining the valve member in the closed position during the normal operating conditions and, wherein the valve member (54) separates from the seal surface (57) upon application of a fluid pressure force on the valve member that is greater than the predetermined spring force thereby allowing pressurized fluid to pass through the through holes (55) and the discharge opening (60) in the housing when an overpressure condition exists by the fluid pressure exceeding the predetermined spring force" as recited in claim 1.

Regarding claim 2, Holicer discloses that "the valve member has one or more through-holes (55) formed therein" as claimed.

Regarding claim 3, Holicer discloses that "the one or more through-holes are arranged on the valve member (54) to inhibit fluid flow through the through-holes when the valve member is sealing(ly) engaged with the seal surface" as claimed.

Regarding claim 4, Holicer discloses that "the seal surface (57) is generally annular in shape" as claimed.

Regarding claim 5, Holicer discloses that "the valve member (54) is disk-shaped having a generally circular bottom surface for engaging the seal surface" as claimed.

Regarding claim 6, Holicer discloses that "the holes (55) are arranged in a circular pattern (such as at the six o'clock and twelve o'clock position as illustrated) about the circumference of the bottom surface" as claimed.

Regarding claim 7, Holicer discloses that "the through-holes (55) are uniformly spaced about the valve member(54)" as claimed.

Regarding claim 8, Holicer discloses that "the through-holes (55) are commonly sized and shaped" as claimed.

Regarding claim 10, Holicer discloses that "the valve member (54) includes a spring recess (not numbered but clearly shown in the right side of the valve member 54) sized to receive at least an end of the spring" as claimed.

Regarding claim 11, Holicer discloses that "the spring recess (in the valve member) is centered on the axis of motion of the valve member (54)" as claimed.

Regarding claim 12, Holicer discloses that "the housing includes a second spring recess (within the retaining plug 59) sized to receive another end of the spring, the second spring recess being aligned with the spring recess in the valve member" as claimed.

Regarding claims 13-20, the limitations recited therein are merely repeated from the above claims and their anticipation by the reference is considered apparent.

Regarding claim 21, Holicer discloses that "the pattern of through-holes (55) is circular in shape, and a diameter of the pattern is greater than the width of the opening (53a) in the passage" as claimed.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 9 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holicer in view of Wahli et al. (German document No. 1947093).

The patent to Holicer discloses all the claimed features, as noted above, with the exception of having "an annular groove formed in the seal surface receiving an elastomeric seal ring" (claim 9) and "a base having a passage... a housing cover having a cylindrical cavity formed therein, the cover engaging the base and enclosing the seal surface within the cavity" (claim 22).

The document to Wahli et al., in figure 2 specifically, discloses that it is known in the art to employ a "base" (2) having a passage (at 13) therein, which "base" includes an "annular groove" 7 receiving an "elastomeric ring" 8 forming the seal surface (for claim 9) for the valve head 5 to seat upon to sealingly close the valve, and a "housing cover" at 1 defining a cavity therein and "enclosing the seal surface within the cavity" (claim 22) for the purpose of fluid tightly sealing the head and seat contact surface and to form a cavity within an attached "cover which cavity receives and encloses the valve elements therein. The differences here between Holicer and Wahli et al. are considered to be full functional equivalents of each other and represent mere alternative arrangements of seals (on the head of Holicer versus the seat of Wahli et al.) and valve housing construction (valve enclosed by the "base" and closed off by a "cover" 59 in Holicer versus a "base" 2 and valve 5 enclosed by a "cover" 1 of Wahli et al.).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Holicer an annular groove receiving an elastomeric seal ring therein in the seat surface 57 and to employ a "housing cover" attached to the "base" and enclosing the valve elements within a cavity therein for the purpose of fluidly sealing the head and seat contact surfaces and to provide a housing for the valve as recognized by Wahli et al.

Response to Arguments

Regarding applicants specific argument that:

"the valve spring 58 of Holicer is fundamentally and functionally different than the spring recited in claims 1, 13 and 22 of the present application. Specifically, the valve spring 58 of Holicer merely keeps the valve disc 56 in the valve head 54 while fluid may pass through the ports 55 which are always open to the atmosphere. In contrast to the operation of the spring recited in the claims of the present application, Holicer does not inhibit fluid flow during normal operating conditions and permit fluid flow when a predetermined spring force is exceeded. In fact, the ports of Holicer are always open and Holicer is silent on a predetermined spring force indicative of an over pressure condition. As a result, Holicer does not disclose a pressure relief valve for facilitating reliable and repeatable operation by avoiding overpressure conditions as recited in the claims of the present application."

is not well taken in view of the actual operating characteristics of the relief valve illustrated in figure 5.

The valve spring 58 of Holicer is not fundamentally and functionally different than the spring recited in the claims. The valve spring of Holicer does keep the valve disc 56 in the valve head as disclosed as well as maintaining the valve disc 56 against the seat surface 57. So long as the valve head 56 is maintained against the seat surface 57 no fluid will pass through the valve. While the downstream end of the passages 55 are always open to the atmosphere, so to are the downstream end of the passages 48 in

the valve head 18 of the claimed device. During certain operating conditions, for example normal operating conditions, when the fluid pressure is not greater than the force of spring 58, the pressure contained within the tank to which the valve body is connected to is not vented to atmosphere because the spring maintains the valve disc 56 against the valve seat 57. During certain other operating conditions, for example abnormal operating conditions such as when the fluid pressure upstream of the valve is greater than the force of the spring 58, the force of the spring is overcome by the greater fluid pressure forcing the valve head 56 away from the valve seat 57 thus opening the valve and permitting fluid pressure to vent to atmosphere. Until the fluid pressure value becomes lower than a certain predetermined value, determined by the spring force and the differential of area between the lesser area presented when the valve head is seated and the greater area presented of the valve head is unseated, the valve remains open. Once the pressure value drops to the predetermined lower level the spring forces the valve head 56 against the valve seat 57. This procedure reliably repeats itself in the presence of the appropriate values of fluid pressure.

Regarding the remaining remarks, the arguments merely set forth that the additional of the secondary references fails to overcome the above noted deficiency of the primary reference to Holicer. The secondary references are not relied on to teach deficiencies in terms of relief valve operation but rather are relied on to show that the prior art recognizes that it is known in the art to employ a "base" 2 having a passage at 13 therein, which "base" includes an "annular groove" 7 receiving an "elastomeric ring" 8 forming the seal surface (for claim 9) for the valve head 5 to seat upon to sealingly close the valve, and a "housing cover" at 1 defining a cavity therein and "enclosing the seal surface within the cavity" (claim 22) for the purpose of fluid tightly sealing the head and

Art Unit: 3753

seat contact surface and to form a cavity within an attached "cover which cavity receives and encloses the valve elements therein as recognized by Wahli et al.


THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Rivell whose telephone number is (571) 272-4918. The examiner can normally be reached on Mon.-Thur. from 6:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gene Mancene can be reached on (571) 272-4930. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


John Rivell
Primary Examiner
Art Unit 3753

j.r.